

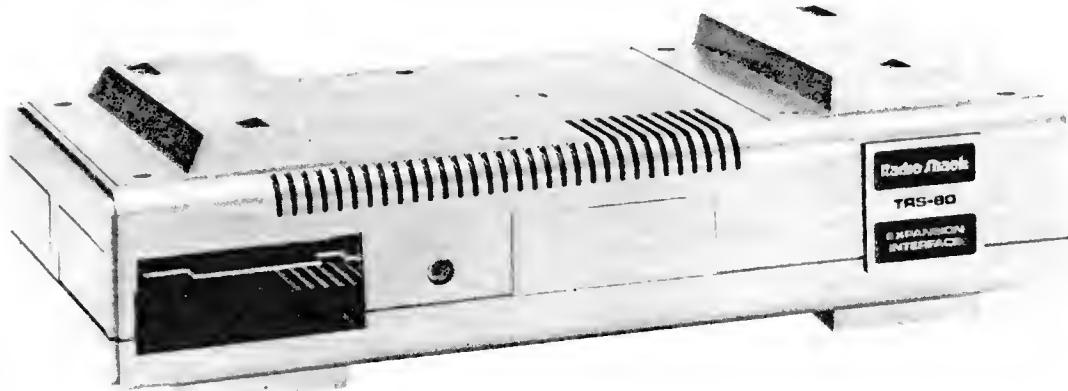
Radio Shack®


Service Manual

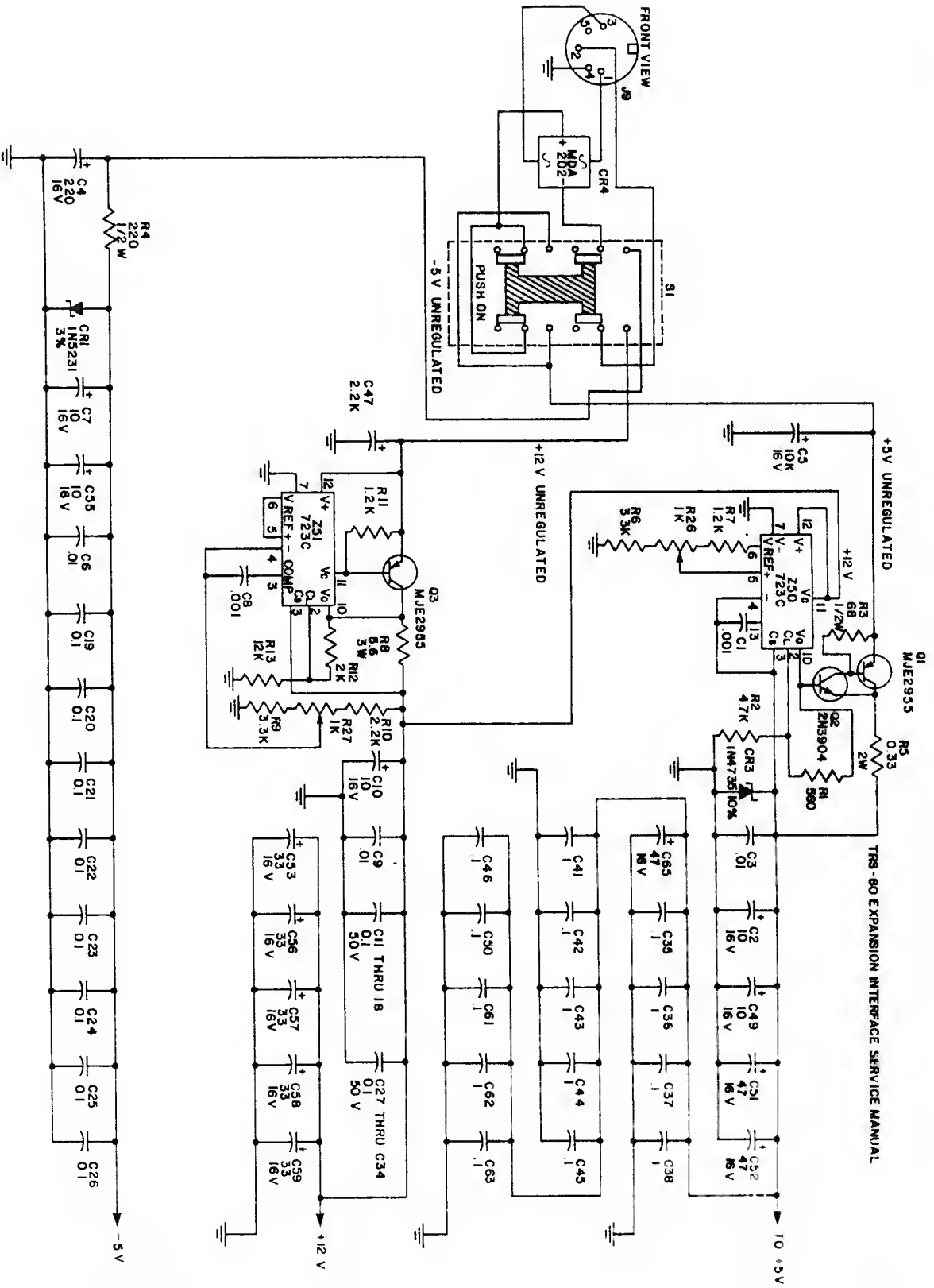
26-1140

EXPANSION INTERFACE

Catalog Number 26-1140



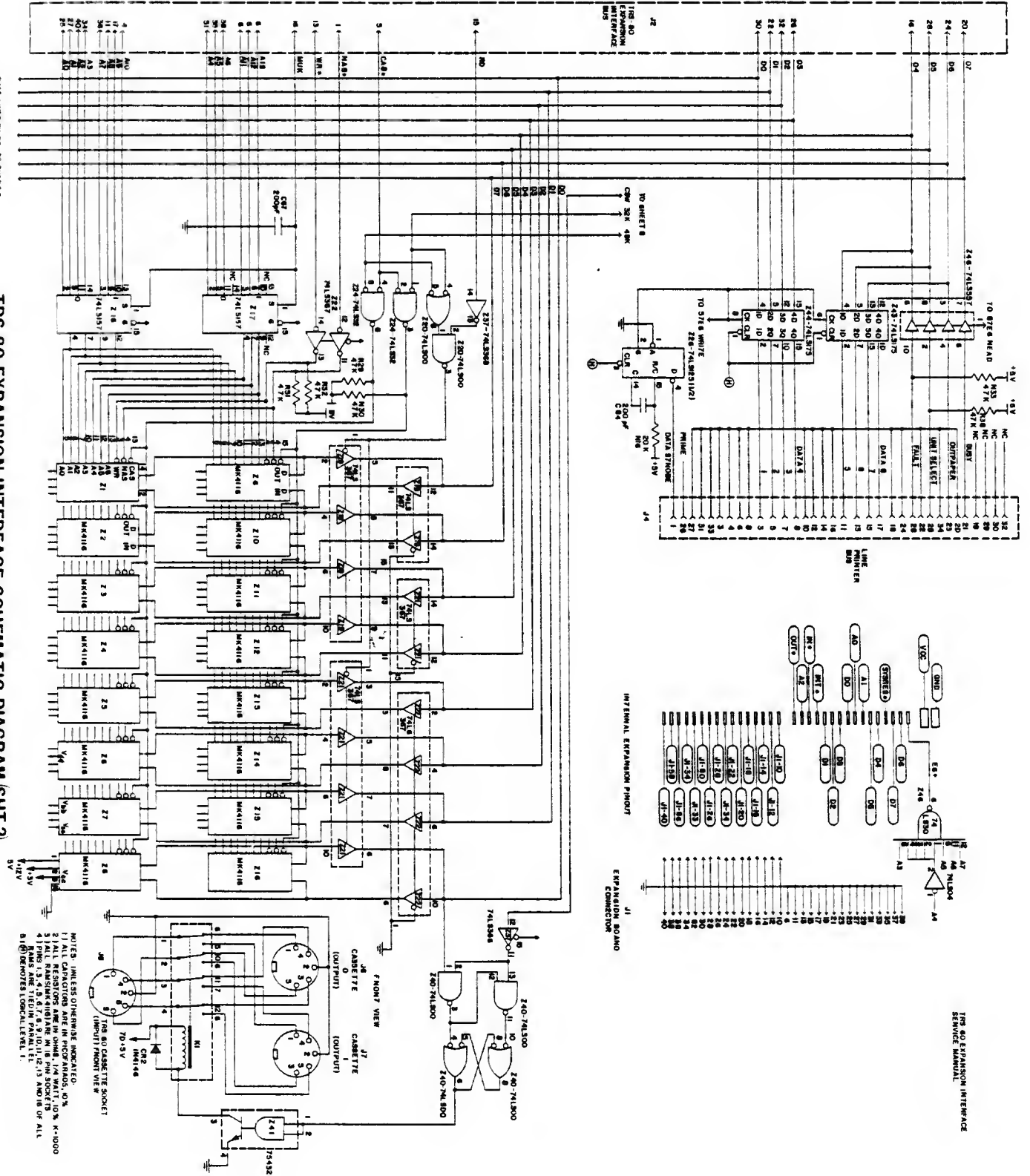
CUSTOM MANUFACTURED IN U.S.A. BY RADIO SHACK  A DIVISION OF TANDY CORPORATION



NOTES, UNLESS OTHERWISE INDICATED:
 1) ALL CAPACITORS ARE IN MICROFARADS, K=1000.
 2) ALL RESISTORS ARE IN OHMS, 1/4 WATT, 5%, K=1000.

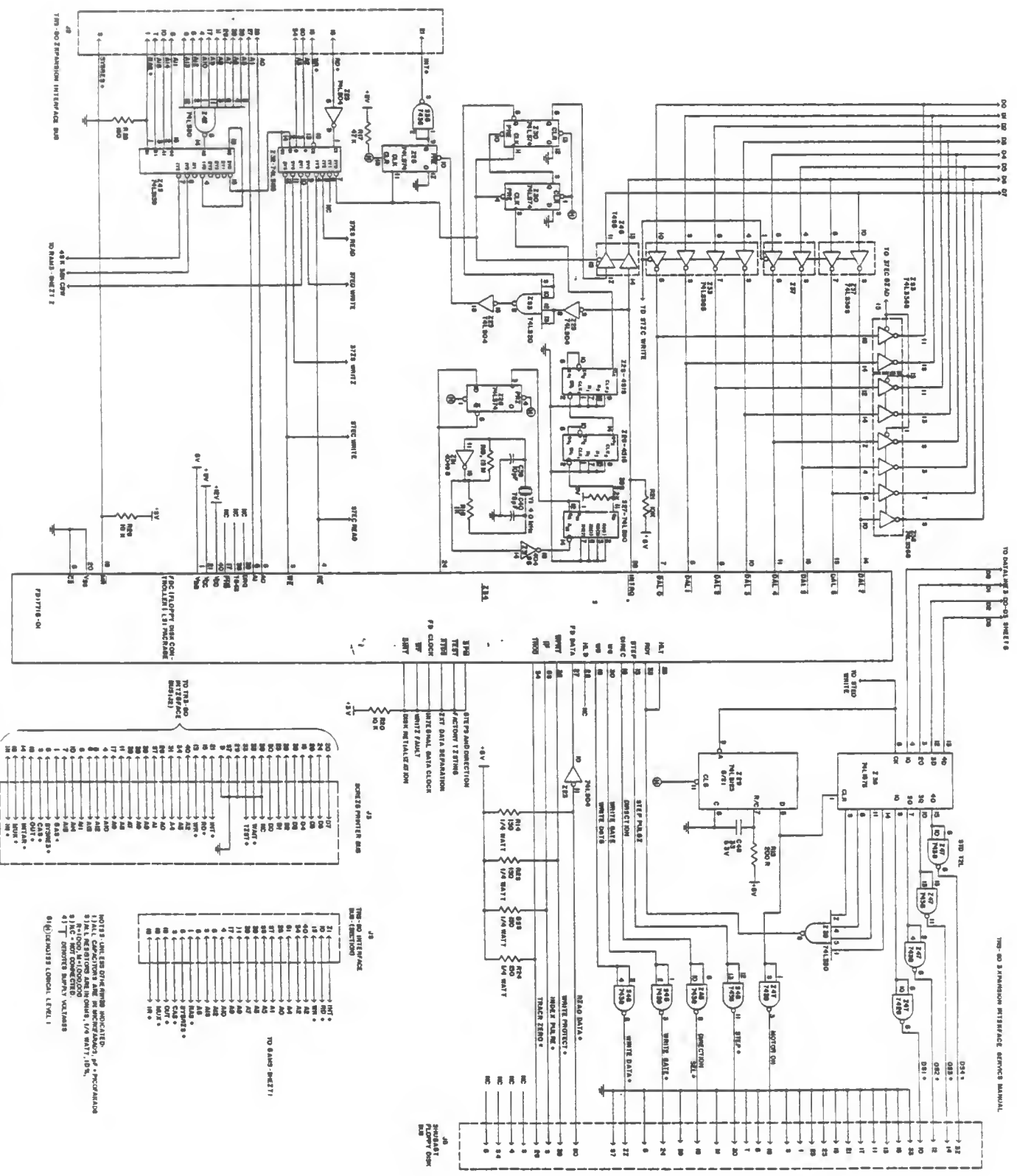
TRS-80 EXPANSION INTERFACE SCHEMATIC DIAGRAM (SHT 1)

TRS-80 EXPANSION INTERFACE SCHEMATIC DIAGRAM (SHT 2)



NOTES: UNLESS OTHERWISE INDICATED:
 1. ALL RESISTORS ARE IN OHMS, UNLESS OTHERWISE SPECIFIED.
 2. ALL RESISTORS ARE 1/4W, 1% TOLERANCE.
 3. ALL CAPACITORS ARE IN PFD, UNLESS OTHERWISE SPECIFIED.
 4. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.
 5. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.
 6. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.
 7. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.
 8. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.
 9. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.
 10. ALL CAPACITORS ARE 50V, UNLESS OTHERWISE SPECIFIED.

TRS-80 EXPANSION INTERFACE SERVICE MANUAL



TRS-80 EXPANSION INTERFACE SCHEMATIC DIAGRAM (SHT 3)

- NOTES: UNLESS OTHERWISE SPECIFIED:
- 1) ALL DIMENSIONS ARE IN INCHES (1/8 INCHES).
 - 2) ALL DIMENSIONS ARE IN INCHES (1/8 INCHES).
 - 3) ALL DIMENSIONS ARE IN INCHES (1/8 INCHES).
 - 4) TOLERANCES UNLESS OTHERWISE SPECIFIED.
 - 5) DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY.

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**EXPANSION INTERFACE
PARTS LIST**


SYMBOL	DESCRIPTION	PART NUMBER	SYMBOL	DESCRIPTION	PART NUMBER
	PRINTED CIRCUIT BOARD, EXPANSION INTERFACE	1700077	C44	0.1 μ F, 12V, Ceramic, Disc	1500052
	CAPACITORS		C45	0.1 μ F, 12V, Ceramic, Disc	1500052
C1	0.001 μ F, 100V, Polyester, Film	1500073	C46	0.1 μ F, 12V, Ceramic, Disc	1500052
C2	10 μ F, 16V, Electrolytic, Radial	1500012	C47	2,200 μ F, 35V, Electrolytic, Axial	1500064
C3	0.01 μ F, 25V, Ceramic, Disc	1500047	C48	33 μ F, 6.3V, Electrolytic, Radial	1500065
C4	220 μ F, 16V, Electrolytic, Radial	1500069	C49	10 μ F, 16V, Electrolytic, Radial	1500012
C5	10,000 μ F, 16V, Electrolytic Axial	1500058	C50	0.1 μ F, 12V, Ceramic, Disc	1500052
C6	0.01 μ F, 25V, Ceramic, Disc	1500047	C51	47 μ F, 16V, Electrolytic, Axial	1500075
C7	10 μ F, 16V, Electrolytic, Radial	1500012	C52	47 μ F, 16V, Electrolytic, Axial	1500075
C8	0.001 μ F, 100V, Polyester, Film	1500073	C53	33 μ F, 16V, Electrolytic, Radial	1500074
C9	0.01 μ F, 25V, Ceramic, Disc	1500047	C54	Not Used	
C10	10 μ F, 16V, Electrolytic, Radial	1500012	C55	10 μ F, 16V, Electrolytic, Radial	1500012
C11	0.1 μ F, 50V, Ceramic, Disc	1500053	C56	33 μ F, 16V, Electrolytic, Radial	1500074
C12	0.1 μ F, 50V, Ceramic, Disc	1500053	C57	33 μ F, 16V, Electrolytic, Radial	1500074
C13	0.1 μ F, 50V, Ceramic, Disc	1500053	C58	33 μ F, 16V, Electrolytic, Radial	1500074
C14	0.1 μ F, 50V, Ceramic, Disc	1500053	C59	33 μ F, 16V, Electrolytic, Radial	1500074
C15	0.1 μ F, 50V, Ceramic, Disc	1500053	C60	Not Used	
C16	0.1 μ F, 50V, Ceramic, Disc	1500053	C61	0.1 μ F, 12V, Ceramic, Disc	1500052
C17	0.1 μ F, 50V, Ceramic, Disc	1500053	C62	0.1 μ F, 12V, Ceramic, Disc	1500052
C18	0.1 μ F, 50V, Ceramic, Disc	1500053	C63	0.1 μ F, 12V, Ceramic Disc	1500052
C19	0.1 μ F, 12V, Ceramic, Disc	1500052	C64	200 pF, 50V, Ceramic, Disc	1500066
C20	0.1 μ F, 12V, Ceramic, Disc	1500052	C65	47 μ F, 16V, Electrolytic, Axial	1500075
C21	0.1 μ F, 12V, Ceramic, Disc	1500052	C66	Not Used	
C22	0.1 μ F, 12V, Ceramic, Disc	1500052	C67	200 pF, 50V, Ceramic, Disc	1500066
C23	0.1 μ F, 12V, Ceramic, Disc	1500052		DIODES	
C24	0.1 μ F, 12V, Ceramic, Disc	1500052	CR1	1N5231, 5.1V, Zener, Selected	4800022
C25	0.1 μ F, 12V, Ceramic, Disc	1500052	CR2	1N4148, Silicon	4800002
C26	0.1 μ F, 12V, Ceramic, Disc	1500052	CR3	1N4735, 6.2V, Zener	4800021
C27	0.1 μ F, 50V, Ceramic, Disc	1500053	CR4	MDA202, 2A, 200V, Bridge Rectifier	4800023
C28	0.1 μ F, 50V, Ceramic, Disc	1500053		JACKS	
C29	0.1 μ F, 50V, Ceramic, Disc	1500053	J6	Connector, Socket, DIN, 5-Pin	2100033
C30	0.1 μ F, 50V, Ceramic, Disc	1500053	J7	Connector, Socket, DIN, 5-Pin	2100033
C31	0.1 μ F, 50V, Ceramic, Disc	1500053	J8	Connector, Socket, DIN, 5-Pin	2100033
C32	0.1 μ F, 50V, Ceramic, Disc	1500053	J9	Connector, Socket, DIN, 5-Pin	2100033
C33	0.1 μ F, 50V, Ceramic, Disc	1500053		RELAYS	
C34	0.1 μ F, 50V, Ceramic, Disc	1500053	K1	5V, 4PDT	4500002
C35	0.1 μ F, 12V, Ceramic, Disc	1500052		TRANSISTORS	
C36	0.1 μ F, 12V, Ceramic, Disc	1500052	Q1	MJE2955, Power, PNP	4824005
C37	0.1 μ F, 12V, Ceramic, Disc	1500052	Q2	2N3904, General Purpose, NPN	4822001
C38	0.1 μ F, 12V, Ceramic, Disc	1500052	Q3	MJE2955, Power, PNP	4824005
C39	10 pF, 50V, Ceramic, Disc	1500067			
C40	75 pF, 50V, Ceramic, Disc	1500068			
C41	0.1 μ F, 12V, Ceramic, Disc	1500052			
C42	0.1 μ F, 12V, Ceramic, Disc	1500052			
C43	0.1 μ F, 12V, Ceramic, Disc	1500052			

**EXPANSION INTERFACE
PARTS LIST (Cont'd)**

SYMBOL	DESCRIPTION	PART NUMBER	SYMBOL	DESCRIPTION	PART NUMBER
RESISTORS					
R1	560 ohm, 1/4 W, 5%	4704041	R32	4.7K, 1/4 W, 5%	4704061
R2	4.7K, 1/4 W, 5%	4704061	R33	4.7K, 1/4 W, 5%	4704061
R3	68 ohm, 1/2 W, 5%	4708022	R34	4.7K, 1/4 W, 5%	4704061
R4	220 ohm, 1/2 W, 5%	4708032	R35	150 ohm, 1/4 W, 5%	4704028
R5	0.33 ohm, 2 W, 5%	4717004	SWITCHES		
R6	3.3K, 1/4 W, 5%	4704058	S1	4PDT, Push Knob	5102008 2500037
R7	1.2K, 1/4 W, 5%	4704049	SOCKETS		
R8	5.6 ohm, 3 W, 5%	4717003	X1	16-Pin, I. C. Socket	2100037
R9	3.3K, 1/4 W, 5%	4704058	X2	16-Pin, I. C. Socket	2100037
R10	2.2K, 1/4 W, 5%	4704054	X3	16-Pin, I. C. Socket	2100037
R11	1.2K, 1/4 W, 5%	4704049	X4	16-Pin, I. C. Socket	2100037
R12	2K, 1/4 W, 5%	4704053	X5	16-Pin, I. C. Socket	2100037
R13	12K, 1/4 W, 5%	4704070	X6	16-Pin, I. C. Socket	2100037
R14	150 ohm, 1/4 W, 5%	4704028	X7	16-Pin, I. C. Socket	2100037
R15	200K, 1/4 W, 5%	4704091	X8	16-Pin, I. C. Socket	2100037
R16	20K, 1/4 W, 5%	4704073	X9	16-Pin, I. C. Socket	2100037
R17	4.7K, 1/4 W, 5%	4704061	X10	16-Pin, I. C. Socket	2100037
R18	1K, 1/4 W, 5%	4704047	X11	16-Pin, I. C. Socket	2100037
R19	15 MEG, 1/4 W, 5%	4704127	X12	16-Pin, I. C. Socket	2100037
R20	10K, 1/4 W, 5%	4704068	X13	16-Pin, I. C. Socket	2100037
R21	10K, 1/4 W, 5%	4704068	X14	16-Pin, I. C. Socket	2100037
R22	150 ohm, 1/4 W, 5%	4704028	X15	16-Pin, I. C. Socket	2100037
R23	150 ohm, 1/4 W, 5%	4704028	X16	16-Pin, I. C. Socket	2100037
R24	150 ohm, 1/4 W, 5%	4704028	X34	40-Pin, I. C. Socket	2100035
R25	10K, 1/4 W, 5%	4704068	CRYSTALS		
R26	1K, 30%, Variable	4750019	Y1	4.0000 MHz	2300005
R27	1K, 30%, Variable	4750019			
R28	2.2K, 1/4 W, 5%	4704054			
R29	4.7K, 1/4 W, 5%	4704061			
R30	4.7K, 1/4 W, 5%	4704061			
R31	4.7K, 1/4 W, 5%	4704061			

**EXPANSION INTERFACE
PARTS LIST (Cont'd)**

SYMBOL	DESCRIPTION	PART NUMBER	SYMBOL	DESCRIPTION	PART NUMBER
Z17	74LS157, Quad 2-Line to 1-Line Data Selector/Multiplexer	3102020	Z33	74LS368, Hex Bus Driver	3102025
Z18	74LS157, Quad 2-Line to 1-Line Data Selector/Multiplexer	3102020	Z34	FD1771B-01, Floppy Disc Controller	3110002
Z19	74LS367, Hex Bus Driver, Non-Inverted Data Output, 3-state	3102024	Z35	74LS20, Dual 4-Input NAND Gate	3102011
Z20	74LS00, Quad 2-Input Positive-NAND Gate	3102006	Z36	74LS175, Quad D Flip-Flop with Clear	3102023
Z21	74LS367, Hex Bus Driver, Non-Inverted Data Output, 3-state	3102024	Z37	74LS368, Hex Bus Driver, Inverted Data Output, 3-state	3102025
Z22	74LS367, Hex Bus Driver, Non-Inverted Data Output, 3-state	3102024	Z38	74LS368, Hex Bus Driver, Inverted Data Output, 3-state	3102025
Z23	74LS04, Hex Inverter	3102008	Z39	7438, Quad 2-Input Positive-NAND Buffer with Open Collector Outputs	3102032
Z24	74LS32, Quad 2-Input Positive OR Gate	3102014	Z40	74LS00, Quad 2-Input Positive-NAND Gate	3102006
Z25	4518, Dual BCD Up Counter	3102034	Z41	75452, Dual Peripheral Positive-NAND Driver	3106002
Z26	4518, Dual BCD Up Counter	3102034	Z42	74LS30, 8-Input Positive-NAND Gate	3102013
Z27	74LS90, Decade Counter	3102031	Z43	74LS139, Decoder/Multiplexer	3102030
Z28	74LS74, Dual D Positive-Edge-Triggered Flip-Flop with Preset and Clear	3102015	Z44	74LS175, Quad D Flip-Flop with Clear	3102023
Z29	74LS123, Dual Retriggerable Monostable Multivibrator with Clear	3102033	Z45	74LS175, Quad D Flip-Flop with Clear	3102023
Z30	74LS74, Dual D Positive-Edge-Triggered Flip-Flop with Preset and Clear	3102015	Z46	74LS367, Hex Bus Driver, Non-Inverted Data Output, 3-state	3102024
Z31	40498, Hex Inverter/Buffer	3102035	Z47	7438, Quad 2-Input Positive-NAND Buffer with Open Collector Outputs	3102032
Z32	74LS155, Dual 2-Line to 4-Line Decoder/Multiplexer	3102029	Z48	7438, Quad 2-Input Positive-NAND Buffer with Open Collector Outputs	3102032
			Z49	74LS30, 8-Input Positive-NAND Gate	3102013
			Z50	723 DIP, Voltage Regulator	3100001
			Z51	723 DIP, Voltage Regulator	3100001


RADIO SHACK A DIVISION OF TANDY CORPORATION
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 CANADA: BARRIE, ONTARIO L4M 4W5

TANDY CORPORATION

AUSTRALIA	BELGIUM	U K
280-316 VICTORIA ROAD RYDALMERE, N S W 2116	PARC INDUSTRIEL DE NANINNE 5140 NANINNE	BILSTON ROAD WEDNESBURY WEST MIDLANDS WS1D 7JN